REMARKS

In the Office Action, the Examiner noted that claims 1-20 are pending in the application and that claims 1-20 stand rejected. By this response claims 2, 3, 5-9, 13-15 and 18 have been amended to more clearly define the Applicants' invention and to correct for informalities pointed out by the Examiner and not in response to prior art. All other claims continue unamended.

In view of both, the amendments presented above and the following discussion, the Applicants submit that none of the claims now pending in the application are anticipated under the provisions of 35 U.S.C. § 102. Furthermore, the Applicants also submit that all of these claims now fully satisfy the requirements of 35 U.S.C. § 112. Thus, the Applicants believe that all of these claims are now in allowable form.

Objections

A. 35 U.S.C. § 112.

The Examiner has objected to the Applicants' claims for reasons of formality. Specifically, the Examiner notes that claim 2 recites the clause "said iteratively determined circuit path" and further recites "said ideal path" and "said threshold level" and that these clauses show insufficient antecedent basis in the claim. The Examiner further notes several other claims exhibiting similar informalities.

In response the Applicants have amended claims 2, 3, 5-9, 13-15 and 18 to correct for the informalities objected to by the Examiner. As such the Applicants respectfully submit that the basis for the Examiner's objections to the claims has been removed. Thus, the Applicants respectfully request that the Examiner's objections to the Applicants' claims be withdrawn.

Rejections

A. 35 U.S.C. § 102

The Examiner rejected claims 1-20 under 35 U.S.C. 102(e) as being anticipated by Daley et al. (U.S. Patent 6,256,309, hereinafter "Daley"). The rejection is respectfully traversed.

The Examiner alleges that regarding claim 1, Daley teaches a system/method related to field of communication system teaching a system/method comprising all of the aspects of the Applicants' invention. The Applicants respectfully disagree.

"Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim" (Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984)(citing Connell v. Sears, Roebuck & Co., 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)) (emphasis added). The Applicants respectfully submit that Daley fails to teach, suggest or disclose each and every element of at least the Applicants' claim 1, which specifically recites:

> "A method, comprising the step of:
> iteratively defining a circuit path between a source node and a destination node in a network comprising a plurality of nodes interconnected by links, where **each link has associated with it a respective bandwidth utilization level, and where links having bandwidth utilization levels exceeding a threshold level are not used to define said circuit path.**" (emphasis added)

In support of at least claim 1, the Applicants in the specification, specifically recite:

> "In the network 300 of FIG. 3, a circuit is to be provisioned between a start node (node A) and an end node (node G). The shortest path between nodes A and G is the path through the following nodes A-H-I-J-G. However, according to the invention, if the bandwidth utilization level or "load" on any of the links connecting nodes A through G has reached or exceeded a preset threshold level, such as 50% bandwidth utilization level, then another shortest or "next shortest" path is found where the load is found, such that the threshold level is honored." (See Specification, page 8, lines 18-27).

And

> "It is noted that the threshold level is a measure for a digital link, not a measure of the aggregate of links between two nodes. That is, the threshold level is applied to the specific digital link between two nodes contemplated to be used within the provisioned circuit. Where multiple links between two nodes exist, alternate links may be used or the multiple links may have associated with them different threshold levels, depending on the technology used to provide each link. In this manner, the "shortest path" algorithm and threshold level comparison are used in an iterative fashion whereby each link determined to be appropriate according to the shortest path algorithm is compared to a corresponding threshold level to determine if the link is, in fact, appropriate with respect to the bandwidth utilization level of the link. If the link is over utilized or otherwise inappropriate, then a different link may be selected for use in the shortest path algorithm. In this manner, those links following an inappropriate or over utilized link do not have to be processed by the shortest path algorithm." (See Specification, page 9, lines 9-27).

It is clear from at least the portions of the Applicants' specification recited above, that the Applicants' invention is directed, at least in part, to a comparison of a measure of the amount of a total available bandwidth being utilized by links that have been proposed for completing a circuit path between a source node and a destination node to a predetermined threshold level. More specifically, in the invention of the Applicants, if a bandwidth usage level of a proposed link to be used in a communication path is above a predetermined threshold, the link is not used to define a circuit between a source node and a destination node. As such, in the invention of the Applicants, load balancing between all of the links of

a communication system may be accomplished. More specifically, the threshold level for determining whether a link between two nodes is over utilized may be predetermined or user settable. As such, the bandwidth usage level of all of the links of a subject communication system may be kept below the threshold level.

Furthermore, the Applicants further teach and claim determining an ideal shortest path between the source node and destination node and comparing the ideal shortest path to the iteratively defined circuit path, and if a defined circuit path exceeds the determined ideal shortest path by a predetermined threshold amount, adjusting the threshold level and re-defining the circuit path.

In contrast to the Applicants' invention, Daley specifically claims a method of organizing a plurality of shortest path routes for a network computed according to a network constraint into two or more bandwidth brackets, each of the bandwidth brackets including a lower bandwidth threshold and an upper bandwidth threshold. (See Daley, claim 1). In support of the claims, Daley specifically recites:

> "The concept of bandwidth brackets or thresholds is introduced to control the minimum bandwidth of routes precomputed by the shortest path algorithms. For example, a preconfigured bandwidth threshold of 100 Kbps directs the routing algorithm to create a set of paths to all destinations with at least 100 Kbps bandwidth. The bandwidth thresholds apply to routes generated using delay-based routing or cost-based routing. In one embodiment, the default bandwidth thresholds are spread logarithmically and generate precomputed routes where:
>
> available bandwidth of each path is non-zero;
> available bandwidth of each path is at least 100 Kbps;
> available bandwidth of each path is at least 1 Mbps; and
> available bandwidth of each path is at least 10 Mbps.
>
> Thus, the individual SPTs 30a-30n are categorized not only by optimization constraint, but also are qualified by bandwidth brackets." (See Daley, col. 8, lines 27-43).

Daley further recites:

> "At steps 54-56, the path selection algorithm 38 accesses the SPTs 30a-30n sequentially until an acceptable route is found or all SPTs have been accessed. In one embodiment, four delay- or cost-based SPTs are implemented:
>
> SPT with non-zero bandwidth;
> SPT with at least threshold_1 (100K) bandwidth;
> SPT with at least threshold_2 (1M) bandwidth; and
> SPT with at least threshold_3 (10M) bandwidth.
>
> There will be cases where the SPTs 30a-30n will not be able to supply a route with enough bandwidth to satisfy a call request, even when sufficient bandwidth is available in the network. This can occur if a call's request for bandwidth exceeds the bandwidth threshold for the SPT and no higher bandwidth SPT is available. In such cases, i.e., when a route cannot be found in the SPTs 30a-30n and the requested bandwidth exceeds the highest bandwidth brackets of the SPTs, an on-demand route computation is performed. The configuration of the bandwidth thresholds controls the frequency of these on-demand computations." (See Daley, col. 9, lines 26-46).

It is evident from at least the portions of Daley recited above, that the invention of Daley is directed, at least in part, to a routing scheme that generates a selection of precomputed routes that provide a wide range of available bandwidths while keeping delay or cost to a minimum, thus enabling high call rates at an overall lower call blocking rate. In Daley, the routing scheme achieves this end by generating routes using a set of preconfigured bandwidth thresholds for pruning lower bandwidth links while least-cost optimizing on delay-based, or cost-based, optimization functions. The shortest path routes computed in Daley are searched, e.g., upon receipt of a call request, according to the bandwidth brackets, e.g., from lowest fit (i.e., the lowest bandwidth that will accommodate the request), to highest bandwidth bracket available. (See Daley, Summary). Specifically, in Daley, bandwidth brackets are created for determining whether a determined path has the bandwidth capacity to fulfill a

route request. As such, a route request requiring a specific bandwidth capacity will be serviced by the bandwidth brackets having enough bandwidth to fulfill the route request.

However, there is absolutely no teaching, suggestion or disclosure in Daley for "iteratively defining a circuit path between a source node and a destination node in a network comprising a plurality of nodes interconnected by links, where each link has associated with it a respective bandwidth utilization level, and where links having bandwidth utilization levels exceeding a threshold level are not used to define said circuit path" as claimed in at least the Applicants' claim 1. More specifically, Daley does not teach comparing bandwidth utilization of proposed links against predetermined bandwidth threshold levels to determine if a proposed link will be used to fulfill a route request. The Applicants' invention advantageously balances a total load among the links of a communication system. Daley is incapable of performing at least this aspect of the Applicants' invention.

In further contrast to the Applicants' invention, Daley fails to teach, suggest or disclose determining an ideal shortest path between the source node and destination node and comparing the ideal shortest path to the iteratively defined circuit path, and if a defined circuit path exceeds the determined ideal shortest path by a predetermined threshold amount, adjusting the threshold level and re-defining the circuit path as taught in the Applicants' specification and claimed by at least the Applicants' claim 1. Instead, Daley teaches that if a link is below a predetermined bandwidth threshold for a specific SPT, the link is not to be used. The teachings and claims of Daley fall far short of the Applicants' invention and claims.

For at least the reasons stated above, the Applicants respectfully submit that Daley fails to teach, suggest or describe provisioning a circuit in a manner that avoids over utilizing or overloading communications links between network elements or nodes within a telecommunications or other network as taught and claimed by the Applicants in at least the Applicants' claim 1.

Therefore, the Applicants submit that claim 1 is not anticipated by the teachings of Daley and, as such, fully satisfies the requirements of 35 U.S.C. §102 and is patentable thereunder.

Likewise, independent claims 7, 10, 14, 17 and 19 recite similar relevant features as recited in claim 1. As such, and for at least the reasons stated herein, the Applicants submit that independent claims 7, 10, 14, 17 and 19 are also not anticipated by the teachings of Daley and, as such, also fully satisfy the requirements of 35 U.S.C. §102 and are patentable thereunder.

Furthermore, dependent claims 2-6, 8-9, 11-13, 15-16, 18 and 20 depend either directly or indirectly from independent claims 1, 7, 10, 14, 17 and 19 and recite additional features therefor. As such and for at least the reasons set forth herein, the Applicants submit that dependent claims 2-6, 8-9, 11-13, 15-16, 18 and 20 are also not anticipated by the teachings of Daley. Therefore the Applicants submit that dependent claims 2-6, 8-9, 11-13, 15-16, 18 and 20 also fully satisfy the requirements of 35 U.S.C. §102 and are patentable thereunder.

The Applicant reserves the right to establish the patentability of each of the claims individually in subsequent prosecution.

Conclusion

Thus the Applicants submit that none of the claims, presently in the application are anticipated under the provisions of 35 U.S.C. § 102. Furthermore, the Applicants also submit that all of these claims now fully satisfy the requirements of 35 U.S.C. § 112. Consequently, the Applicants believe that all of these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending n the application,

it is requested that the Examiner telephone Jorge Tony Villabon, Esq. at (732) 530-9404 x1131 or Eamon J. Wall, Esq. at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

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